Simple Engineering Solutions Senior Proposal

Week 3 May25-May31

Goals for the week

- Develop 2 Tentative ideas
- Continue pricing parts for projects
- Complete working renders in Fusion 360 for each idea
- Meet up and Brainstorm ideas
- Clear up any miscommunications
- Look over submitted papers from past groups

Brainstorming

We met up on Friday 5/28 in person to discuss any issues or concerns. We talked about the strengths and weaknesses of both designs. We also discussed at length what roles we would play and what we were most comfortable with and where we thought we needed to improve/ strengthen our toolset as a group and individually. We both will be both involved in everything, just each taking the point in the area where they have expertise.

Roles

Clarence Scott - Design and Fabrication

Reuben Taveras - Design and Programming

Smart Cooler

This week we focused on finishing the 3D renders to make it easier to visualize the cooler and get a general idea of where the modules will be placed. We also met up and talked about possible construction options and products.

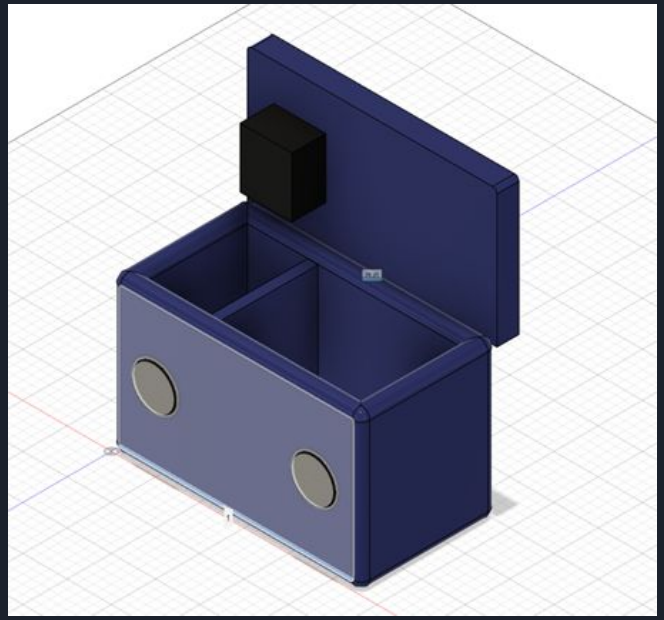
Pros

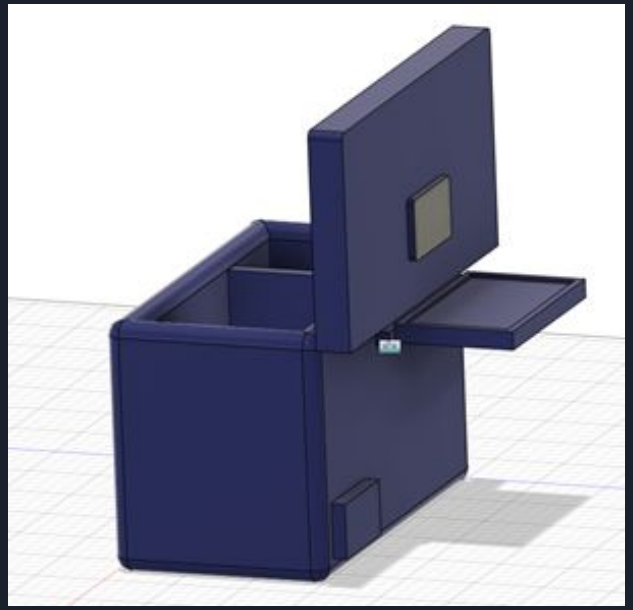
-Manageable budget, parts relatively easy to find and source, and generally simple modular design.

Cons

-Having to Waterproof interior and components, calculating power requirements, and making sure that it reaches complexity required for department.

Cooler Renders





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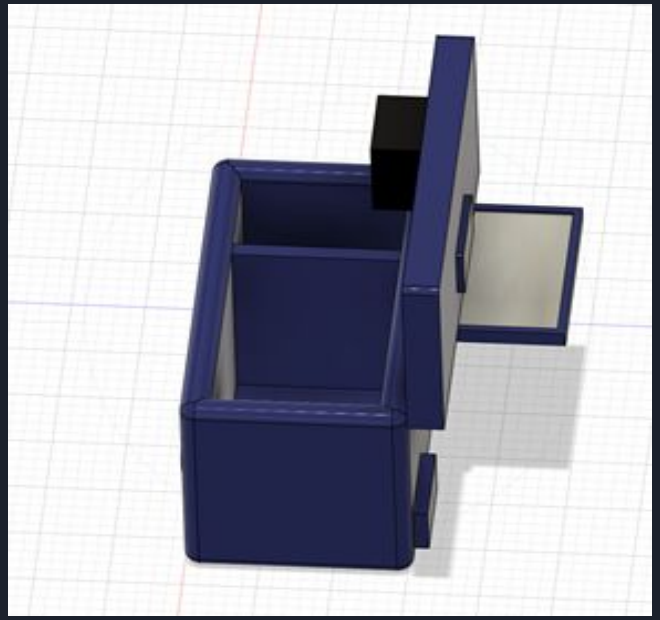

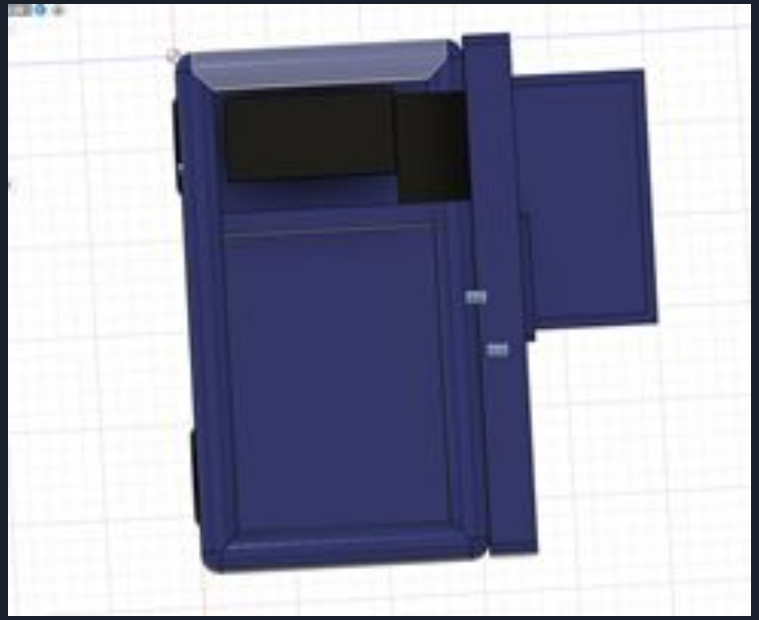

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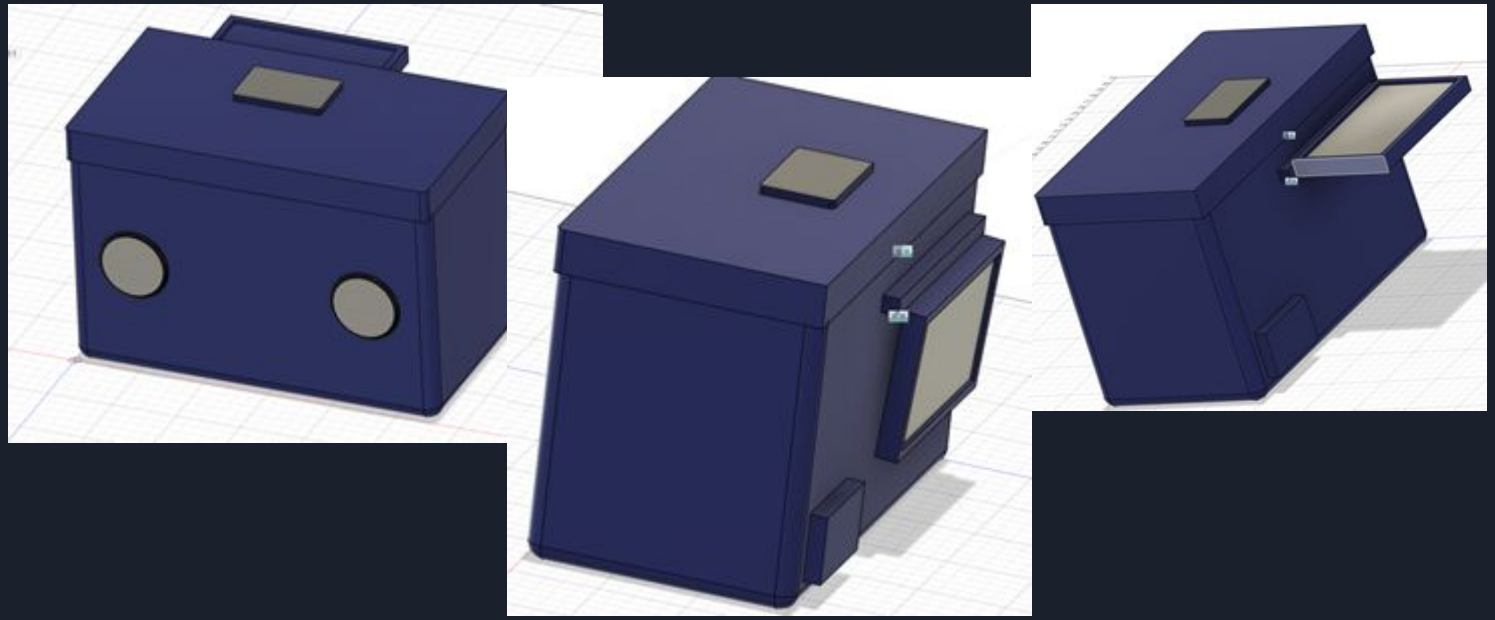
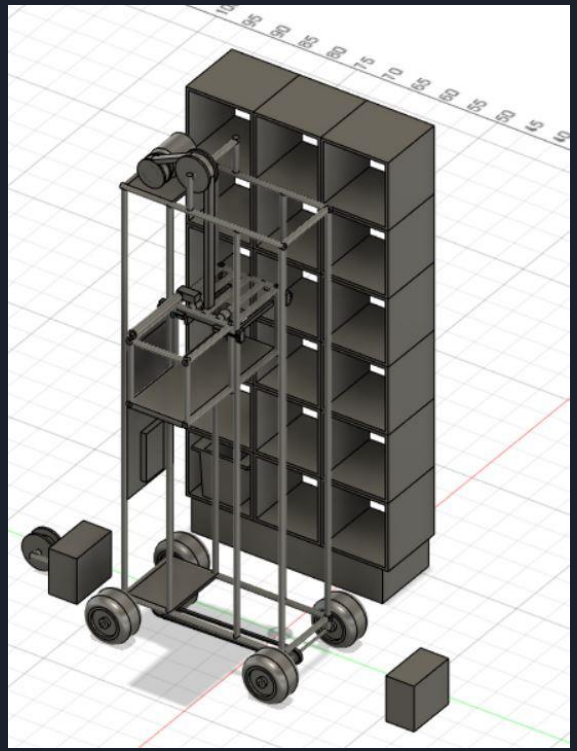


Shelf Organizer

Reaches level of complexity to take 8 months to complete. However, we are worried that buying the parts to fabricate and the electrical components will go beyond the power budget required for the project.



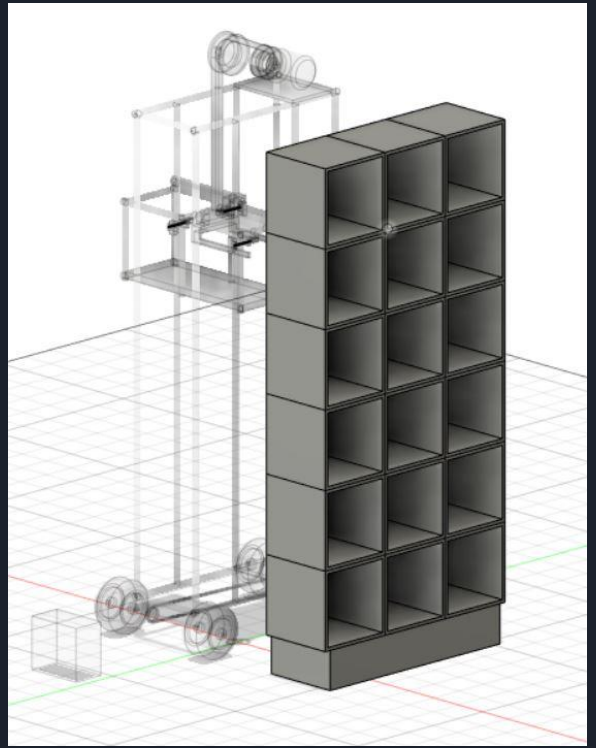
Shelf Organizer

Renamed to Shelf Organizer since not just for books.

Shelves modeled. Dimensions:

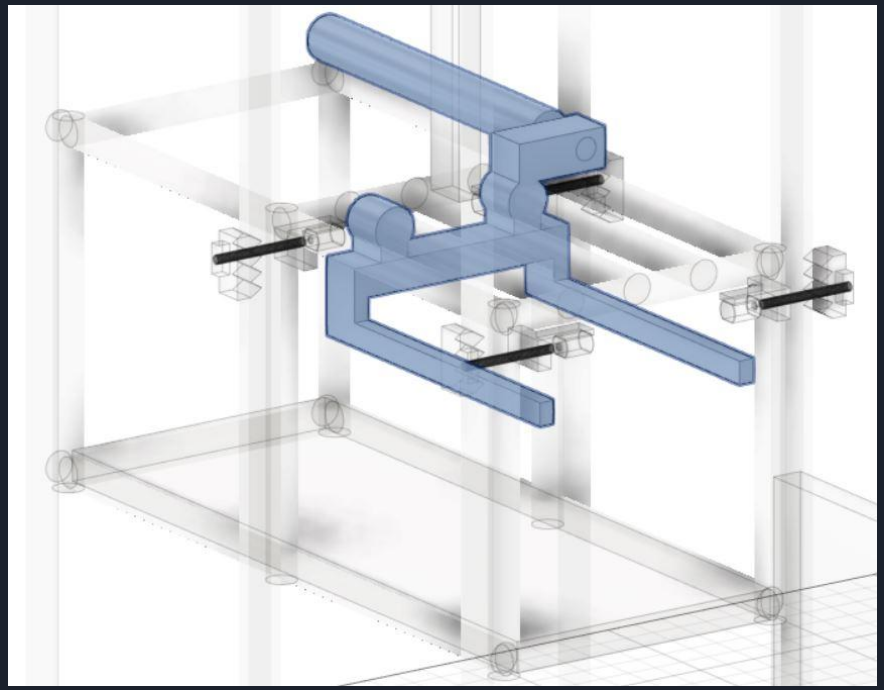
1’x1’x1’ Square shelf

Six shelf column height max but unlimited rows.



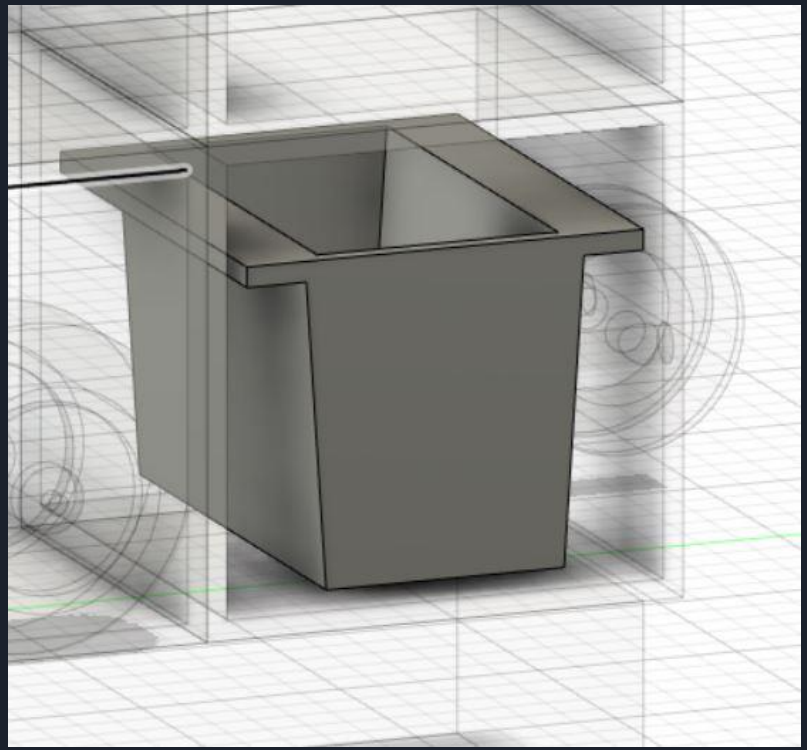
Lift Arm Render

The lift arm will use a linear actuator to push the arm forward and backward. The two hooks at the end can extend sideways.



Bin Render

The bin will have edges that extend so the lift arm can grab the bin and lift it.



Goals for next week

The week was productive and we got some good ideas to work with.

- Finalize the Product that we will going forward with
- Start to research research paper requirements
- Begin to map out the paper and gather references
- Study the marketplace and see what other similar products are available